HISTORY OF MEDICINE

Maimonides: an early but accurate view on the treatment of haemorrhoids

Dan Magrill, Prabhu Sekaran

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Moses Maimonides was not only one of the most influential religious figures of the middle ages, but also a pioneer in a wide variety of medical practices. A brief history of his life, and what is known about his medical education, is given here. His paper on haemorrhoids is summarised, as well as a review of the current understanding of the pathogenesis, prevention and treatment of this common condition. The comparison of Maimonides' writings to modern understanding of not only the prevention and treatment of haemorrhoids, but also his approach to the patient as a whole in terms of pre- and postoperative care, demonstrate how ahead of his time this great philosopher was.

Moses Maimonides (fig 1) was a world-renowned medieval physician and philosopher. In 1138 he was born Moses, son of Maimon (also known as Moses Maimonides or Rambam), in Cordova, Spain. A fanatical Islamic sect from North Africa forced his family into exile, and having travelled for 10 years, they settled in Fez, Morocco, before moving again in 1165 to Fostat (Old Cairo).[1]

His medical education is poorly recorded, but it is thought he read a great deal, as evidenced by his profound knowledge of contemporary medieval medicine, and Greek and Muslim authors. He grew up in times of poor healthcare, with infant and child mortality leading to half the population dying before they were 10 years old, and lost his father and brother soon after arriving in Egypt.[2]

He was appointed court physician to the Regent of Egypt while the Sultan (Saladin the Great) was fighting the crusades, and later to the Sultan's son and heir to the throne. He reputedly declined an offer from Richard the Lionheart to become his personal physician.[1] According to a letter written to his friend Rabbi Samuel ibn Tibbon his daily duties to the Sultan would last from first light until well into the afternoon. In true Hippocratic fashion, he would then see his other patients, ''both Jews and Gentiles, nobles and common people…friends and enemies'' until well into the night.[1]

Apart from his medical achievements recorded in the 10 medical treatises (see box), he was the greatest Jewish thinker of the Middle Ages and the spiritual leader of the Jewish community in Egypt,[3] completing the great works of *Commentary on the Mishnah (1168)* and *Mishneh Torah (1178)*. The *Commentary on the Mishnah* represented a discussion on all the 63 tractates of the Talmud. The *Mishneh Torah* was Maimonides attempt to systematise all Biblical and Talmudic law in one work. These two works were written in Hebrew rather than the vernacular Arabic, in which Maimonides wrote all his other works.[4]

This paper will focus on his fourth medical work, *Treatise on Haemorrhoids*, and how his principles of conservative and preventative medicine are relevant today.

TREATISE ON HAEMORRHOIDS

Maimonides' fourth paper was written in Cairo at the request of a young noble Egyptian, thought to be related to the Sultan. The patient had presented to Maimonides requesting surgery for haemorrhoids that ''occurred at the mouth of the rectum…[that] prolapsed [and] returned to the interior of the body…[the] pain was quite severe''.[5] In the introduction to the Treatise, Maimonides laid out his philosophy that surgical resection should be a last resort as ''there are people in whom [haemorrhoids]… have been (surgically) extirpated and in whom other haemorrhoids developed. This is because the causes that gave rise to the original ones remained and therefore new ones developed''.[5] He goes on to describe how changes in diet can prevent the formation of haemorrhoids.

Contemporary medieval thinking on the aetiology of disease was influenced by Galen and Hippocrates and it was believed that disease occurred due to alterations in the four separate humours of the body; blood, phlegm, yellow-bile and black-bile.[6] Maimonides' writings show a profound knowledge of ancient Greek authors as well as Arabic Physicians such as Rhazes of Persia, Ibn Zuhr, Avicenna and Ibn Wafin. Maimonides, in his *Commentary on the Aphorisms of Hippocrates*, occasionally criticises both Hippocrates and Galen where either of these Greeks differed in his opinions.[7]

Maimonides believed that it was an excess of the black-bile, accumulating in the lowermost parts of the body, that led to the development of haemorrhoids. He defined haemorrhoids as ''the vessels of the mouth of the anus (rectum) become engorged therewith and stretch and widen. Warmth develops at these sites as well as moistness, and these prolapses develop''.[5]

Maimonides classifies haemorrhoids into two types. The mild types are ''open and flow'' because they have active bleeding. The ''closed and obstructed'' type are more serious, with the stasis

See end of article for authors' affiliations

Correspondence to: Dr Dan Magrill, 47 George Roche Road, Canterbury, Kent CT1 3FF, UK; danmagrill@hotmail.com

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Figure 1 A portrait of Maimonides.

of blood leading to complications such as ''insanity…and falling sickness''.[5] When suggesting therapeutic interventions, the type of haemorrhoid was of paramount importance.

The non-operative treatments described in *Treatise on Haemorrhoids* include changes to lifestyle, diet and topical treatments, as well as enemas, vaporising and fumigation. Maimonides strongly believed that ''one should always strive to soften the stools'', and that ''the composition of one's foods should always produce softening''.[5] He recommended a number of dietary changes to achieve soft stools, not least the administration of ''ten drachmas of senna''. The topical treatments suggested included regular application of oils, and a fumigation technique utilising the smoke from burning rue seeds.[5] Rue is a genus of evergreen subshrubs from Europe with a strong scent.

As well as the long term preventative treatments mentioned above, Maimonides recognised ''that haemorrhoids sometimes become acute…swelling develops, pain increases and the stool is withheld…occasionally, something egresses from them and swells externally and the pain becomes stronger and fever and suffering ensue''.[5] His management of acute inflammatory episodes included blood letting and chicken soup to soften stools.

The final chapters of the Treatise are concerned with the option of surgical management. He recognised the importance of surgery especially indicated for the ''closed'' type, perhaps referring to strangulated haemorrhoids. ''[The] excision of the haemorrhoids should only be performed by an experienced, knowledgeable physician who takes into account the general condition of the patient, his age, strength, the particular time, and the possible association of this illness with other illnesses or occurrences that might supervene.''[5]

CURRENT UNDERSTANDING OF HAEMORRHOIDS

Haemorrhoids result from pathological changes in prolapsed anal cushions, and by old age have an incidence of up to 36.4%.[8] The pathogenesis of haemorrhoids is a controversial area.

Maimonides' medical treatises[1]

- Extracts from Galen or the Art of Cure
- Commentary on the aphorisms of Hippocrates
- The medical aphorisms of Maimonides
- Treatise on haemorrhoids
- Treatise on co-habitation
- Treatise on asthma
- Treatise on poisons and their antidotes
- Regimen of health
- Discourse on the explanation of fits
- Glossary of drug names

Burkitt's (1972) dietary fibre hypothesis was in vogue until recently, postulating a link between a high fibre diet and a low incidence of haemorrhoids in Africa.[9] This is a link that had been previously noted.[10] Patients that have low fibre diets produce harder stools and have to strain more on defecation, producing an increase in venous pressure and engorgement of the anal cushions, the chronic effect of which is prolapse and haemorrhage due to mucosal inflammation.

Opponents of this theory noted that in the UK over the last 30 years there had been a decline in the incidence of haemorrhoids but no change in the consumption of fibre.[11] A current hypothesis includes a loss of connective tissue in the ano-rectal margin with increasing age, and a loosening of the anal cushions as a result of straining.[12]

The Goligher classification[13] is commonly used, separating haemorrhoids into grade I (bleeding), grade II (prolapse with straining with spontaneous reduction), grade III (prolapse necessitating manual reduction) and grade IV (prolapsed and strangulated). More recent classifications have been suggested taking into account the degree of haemorrhage and prolapse.[14]

Modern treatment is influenced by the Goligher classification. Grade I, II and III haemorrhoids are initially treated conservatively with dietary changes, fluid intake and stool softeners. Ointments containing local anaesthesics, mild astringents and steroids are widely used for symptomatic relief; however, there is little evidence showing an effect on underlying pathology.[8] Banding is the outpatient procedure of choice in the UK for 75–79% of general and colorectal surgeons, with injection sclerotherapy the second most common procedure (56–61%). Banding is an effective treatment for 79% of these patients with grade I–III haemorrhoids.[15]

Indications for surgery are persistent grade IV haemorrhoids or failure of conservative management. In the UK the Milligan Morgan technique is most commonly used (by 46–47%), whereas in the USA it is the closed Ferguson technique.[11 16] More recently there has been a shift towards the Longo stapling technique which has been shown to have less postoperative pain and restore the ano-rectal anatomy closer to its pre-morbid state.[17]

Surgeons are not keen to operate due to the risks to anal sphincter control and other complications, and the adequacy of more conservative treatments. In a study of patients referred to a general surgical outpatients clinic with a diagnosis of haemorrhoids, only 6% went on to have a haemorrhoidectomy.[18] In the emergency setting, few surgeons are willing to operate for similar reasons, preferring conservative intervention followed by elective haemorrhoidectomy.

COMPARISON BETWEEN MAIMONIDES' TREATISE AND CURRENT UNDERSTANDING

It is interesting to note how many similarities as well as differences there are between current medical thinking, and

that of a millennium ago. The first texts concerning haemorrhoids were those of ancient Egyptian papyruses,[19] and Hippocrates wrote one of his ''Works'' on the subject,[20] so even in the 12th century it was by no means a new subject. It should be noted that not only was Maimonides accurate with his theories of pathology and classification methods but also how his practices of preventative and conservative management ring so true today.

Many of the principles of preventative medicine that Maimonides expounded were already mentioned earlier by Galen, Hippocrates, Avicenna and others. But Maimonides added to this knowledge by providing clarity, analysis and enunciation of how diet and exercise affected health and disease.[5]

The pathogenesis involving the four humours as described by Maimonides has since been discarded, but his causal link of diet to the aetiology is still being debated. His belief on the benefits of softening stools certainly stand true to this day. His clinical acumen in describing the signs and symptoms of the disease was precise—in the example quoted above there is a classic description of a strangulated grade IV haemorrhoid. He even goes on to describe the clinical signs of sepsis in an untreated individual.

Maimonides classified haemorrhoids into open and closed, which loosely split patients into having grade I–III or grade IV haemorrhoids. What he noted—and is echoed in today's accepted treatment—is that the former of these should be treated conservatively in the first instance, whereas the latter may require surgical intervention.

His interventions are split into conservative and operative, with the latter reserved for exceptional circumstances. He goes through, in turn, a variety of conservative treatments that are still practised today. He repeatedly discussed the role of diet in treatment and prevention. Though the foods he lists may not be consumed in today's diet, the key principle of softening stools and moderation are still relevant in modern times. He lists a variety of topical treatments including ointments, enemas and fumigations, noting that they would not change the disease process. These treatments are still used for symptomatic relief, and we are yet to find strong evidence for their efficacy. Maimonides also mentions a ''syrup of senna'' to soften stools which is still commonplace in modern medical practice. He also used ointments recommended by Ibn Wafid, Rhazes and Avicenna. His surgical technique involved ''letting blood from the haemorrhoid or to excise them with a knife'' but this was considered only in exceptional circumstances.[5]

His description of an acute inflammatory response is accurate, and rather then surgical treatment he suggests conservative management initially. Currently few surgeons advocate operative intervention in the acute setting, preferring to initially manage conservatively before a later haemorrhoidectomy. The mirrors to modern surgical practice continue with his description of preoperative and postoperative management, noting the possibility of complications or recurrence.

CONCLUSION

Maimonides' is a great figure of medical history who emphasised that the important aspects of medicine included preventative medicine and treating a patient as a whole. He is one of the earliest proponents of the influence of mind on the body (psychosomatic medicine). His management of haemorrhoids emphasised the need for prevention by good dieting and exercise (to soften stools), the need for medical intervention, and that conservative intervention is the best method, which is still relevant today.

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Authors' affiliations

Dan Magrill, Prabhu Sekaran, Department of Anatomy, School of Biomedical Sciences, Guy's King's and St Thomas' School of Medicine, King's College, London, UK

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